

CLAIMS

WHAT IS CLAIMED:

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1. A method for ring-trip detection in a line card, comprising:
using a digital-to-analog converter for processing voice signals;
receiving a ringing control signal;
transmitting a ringing signal to a subscriber line in response to the ringing control
signal;
10 receiving a portion of the ringing signal from the subscriber line;
converting the portion of the ringing signal to a digital signal using the digital-to-
analog converter; and
providing a ring-trip indication in response to the digital signal.
- 15 2. The method of claim 1, wherein the ringing signal comprises an AC signal.
3. The method of claim 1, further including terminating the ringing signal in
response to the ring-trip indication.
- 20 4. A method, comprising:
processing a voice signal in a low-current mode of a line card, the line card having an
analog-to-digital converter for converting the voice signal to a digital signal;
receiving a ringing control signal;
switching to a high-current mode of the line card in response to the ringing control
25 signal; and

ringing a telephonic device in response to switching to the high-current mode of the
line card;

converting the portion of the ringing signal to a digital signal using the digital-to-
analog converter; and

5 providing a ring-trip indication in the high-current mode in response to the digital
signal.

5. The method of claim 4, wherein the ringing signal comprises an AC signal.

10 6. The method of claim 4, further including terminating the ringing signal in
response to the ring-trip indication.

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15 7. An apparatus, comprising:
first circuitry capable of processing a voice signal, the first circuitry including an
analog-to-digital converter for processing the voice signal;
a ringing generator capable providing a ringing signal to a subscriber line in response
to receiving a ringing control signal;
second circuitry capable of delivering the portion of the ringing signal to the analog-
to-digital converter of the first circuitry, wherein the analog-to-digital
20 converter converts the portion of the ringing signal to a digital signal; and
ring-trip detection logic capable of providing a ring-trip indication in response to the
digital signal.

25 8. The apparatus of claim 7, further including third circuitry capable of
terminating the ringing signal in response to the ring-trip indication.

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9. An apparatus, comprising:
a feedback loop having an input and output terminal, the feedback loop including an
analog-to-digital converter for processing voice signals;
5 a switch capable of coupling the input and output terminal of the feedback loop in
response to receiving a control signal; and
a ringing generator capable of providing a ringing signal to a subscriber line in
response to the control signal.

10. The apparatus of claim 9, further including circuitry capable of:
receiving at least a portion of the transmitted ringing signal from the subscriber line;
and
delivering the portion of the received ringing signal to the input terminal of the
feedback loop.

11. The apparatus of claim 10, wherein the analog-to-digital converter of the
feedback loop converts the received ringing signal to a digital signal.

12. The apparatus of claim 11, further including ring-trip detection logic, wherein
the ring-trip detection logic generates a ring-trip detection indication in response to the digital
signal.

13. A line card, comprising:
a subscriber line interface circuit capable of:
25 receiving a voice signal from the subscriber line;

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delivering a ringing signal to the subscriber line; and
receiving at least a portion of the transmitted signal from the subscriber line;
and

logic capable of:

processing the voice signal using an analog-to-digital converter;
delivering the portion of the ringing signal to the analog-to-digital converter
for converting the portion of the ringing signal to a digital signal; and
providing a ring-trip indication in response to the digital signal.

14. The line card of claim 13, wherein the subscriber line integrated circuit is a
voltage subscriber line interface circuit.

15. The line card of claim 14, wherein the subscriber line interface circuit is
capable of receiving a data signal in a frequency band above voice signals.

16. The line card of claim 14, wherein the logic provides a ring-trip indication
based on a power of the digital signal over a selected interval.

17. The line card of claim 14, wherein the ringing signal is an AC signal.

18. An apparatus for ring-trip detection, the apparatus having an analog-to-digital
converter for processing voice signals, the apparatus comprising:

means for receiving a ringing control signal;

means for transmitting a ringing signal to a subscriber line in response to the ringing

control signal;

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means for receiving a portion of the ringing signal from the subscriber line;
means for converting the portion of the ringing signal to a digital signal using the
analog-to-digital converter; and
means for providing a ring-trip indication in response to the digital signal.

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